

Flora near Santa Barbara, Cal.

MRS. R. F. BINGHAM.

The vicinity of Santa Barbara, California, is one of the most favored for botanizing, for although we seldom have rain from May to November, there is no time in the year when a search will not be rewarded by something of interest.

An enthusiastic collector can, in a very short time, pick up a goodly number of plants, along the roadside, in the mountain cañons, on the hills and mountains, on the banks of streams, in the dry beds of streams (after the rains are over), in swamps, on the cliffs, and in the sand near the sea, in still water, and in the ocean.

Not only are flowering plants abundant, but many cryptogams can be obtained. Several beautiful ferns are natives here. During the rainy season many species of mosses can be collected, and a few can be found in favorable locations all the year.

Fresh-water algæ can be found in our streams, and this part of the coast is noted for the abundance and beauty of marine algæ, upon which are many forms of diatoms. Those who are interested in lichens and fungi need have no trouble in finding them.

As the result of several years botanizing here (the greater part of which was done in the years 1877, 1878 and 1882), I have collected about 500 species of phanerogams, twenty species of Musci, over 100 of marine algæ, several parasitic fungi, besides ferns, equisetums, Selaginella, Chara, Azolla, Marsilia, and some other cryptogams.

If a person wishes to know the flora of even a limited area, it must be visited often during the year, and for more than one year. The flora changes with the season; while there are many perennials that are always in bloom, there are many plants that bloom and disappear, or cease blooming, and others take their places, so that several species of plants may occupy the same ground during the same year.

Plants that are abundant one year do not always appear the next year, or in succeeding years. This fact may be one reason why botanists visiting a certain locality, may find plants that some previous or succeeding visitor has failed to find.

Each plant seems to know its own season for appearing.

I have often noticed that when the rains were late, many species which can be found when we have early rains do not appear at all, and some later plants do not appear when we have only early rains.

During the present year we had both early and late rains in large quantity, and it has been very favorable for botanizing. Not since 1874 has the flora been so abundant and so perfect. I have found several species in large quantity that I had not seen, except occasional specimens, since 1878. In some places that I had looked over pretty thoroughly in previous years, I have found plants that I had never seen before. I have added over thirty species to my collection that I had not before obtained.

Many plants have been introduced here both from semi-tropical and temperate latitudes, and several have escaped from cultivation.

Many of our native plants are beautiful and have been cultivated in gardens in this country and Europe. Many less attractive plants are nevertheless very interesting. My attention has been especially called to some plants of the order Naiadaceæ, which are found in the sea, growing upon small rocks near low tide marks. When the tides run very low these plants are uncovered, but at the time of blooming the tides are not very low in the daylight, and they can not be seen, yet the water is not deep enough to enable one to collect by means of boats. The only way to obtain it is to search carefully when it is washed ashore.

The leaves are bright green, long, very slender, and one nerved. The blossoms are diœcious, arranged in two vertical rows on the face of a spadix, which is enclosed in the dilated base of a leaf-like spathe. Within the margin, on each side, is a series of short dilated foliaceous appendages. These appendages cover the blossoms, and in the staminate plant are reflexed at maturity; in fruit the base of the nutlets is covered by the appendages.

Imperfect specimens of this plant were collected here by Dr. Torrey, and it was described under the name of *Phyllospadix Torreyi*, but the staminate blossoms were unknown until 1881, when I succeeded in finding both forms of the plant, and from those specimens the generic characters of the plant were established. The plant is washed ashore throughout the year, frequently in large quantities; it blooms in July and August, and the pistillate plant is sometimes abundant, the staminate blossoms are rare, and require careful search to obtain.

Although I have obtained a good many specimens, I do not know of any being found here by any one else, and I do not think it has been found in bloom elsewhere on the coast, although botanists have searched for it in many localities.

There is another species, *Phyllospadix Scouleri*, that was collected in imperfect specimens at Vancouver, and at the mouth of Russian river, but had never been found south of there, or indeed anywhere for several years, until this year, my husband, who is my associate in all my collecting, and without whose untiring assistance I could accomplish but little in field work, has found a specimen with pistillate blossoms. The leaves of this plant are broader than those of *P. Torreyi*, ribbon-like and three-nerved; the peduncles are short and with a single spathe.

Our *Zostera* is somewhat different from that of the Atlantic coast, the leaves nearly one-half inch wide and ten to thirteen nerved; the fruit is also larger than the eastern form. California is a land of large products, which may in some measure explain this fact; but our plant is considered a new variety by Rev. Thomas Morong, who describes it under the name *Zostera marina*, var. *latifolia*.

Strasburger's Laboratory.

DOUGLAS H. CAMPBELL.

The laboratory is not at all pretentious, and is fitted up in the plainest possible manner. In company with the zoological and palæontological laboratories, it occupies an old building known as the "Poppelsdorfer-Schloss," originally the dwelling of some dignitary or other, and not specially adapted to its present purpose. It is a large square building, enclosing a central circular court, around which a gallery, level with the second story, is built, by means of which access is had to the various rooms.

The building is finely situated at the head of a magnificent double avenue of horse-chestnuts, some half-mile in length, which forms the favorite promenade of the citizens of Bonn. Three sides of the building are included in the botanical garden, which is a very good one.

In the garden there is a very good collection of hardy plants, and besides some half-dozen green-houses and con-